Title: Protection of interconnected wind turbines against lightning effects: Overvoltages and electromagnetic transients study

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Abstract: This paper is concerned with direct or indirect lightning strokes on wind turbines, studying overvoltages and electromagnetic transients. As wind power generation undergoes rapid growth, lightning damages involving wind turbines have come to be regarded with more attention. With the aim of providing further insights into the lightning protection of wind turbines, describing the transient behavior in an accurate way, the restructured version (RV) of the electromagnetic transients program (EMTP) is used in this paper. A new case study is presented with two interconnected wind turbines, considering a direct lightning stroke to the blade or considering that lightning strikes the soil near a tower. Comprehensive computer simulations with EMTP-RV are presented and conclusions are duly drawn.

Author Keywords: Electromagnetic Transients; Lightning Protection; Wind Energy

KeyWords Plus: Systems; Networks; Struck; Model; Farm; Time

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